WHAT IS CLAIMED IS:

1. A method of making a magnetic alloy material, the method comprising the steps of:

preparing a melt of an alloy material having a predetermined composition;

rapidly cooling and solidifying the melt of the alloy material to obtain a rapidly solidified alloy having a composition represented by the general formula:

$Fe_{100-a-b-c}RE_aA_bTM_c$

where RE is at least one rare-earth element that is selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er and Tm and that includes at least about 90 at% of La; A is at least one element that is selected from the group consisting of Al, Si, Ga, Ge and Sn; TM is at least one transition metal element that is selected from the group consisting of Sc, Ti, V, Cr, Mn, Co, Ni, Cu and Zn; and mole fractions a, b and c satisfy 5 at%$\leqq$a$\leqq$10 at%, 4.7 at%$\leqq$b$\leqq$18 at% and 0 at%$\leqq$c$\leqq$9 at%, respectively; and

producing a compound phase having an $NaZn_{13}$-type crystal structure in at least about 70 vol% of the rapidly solidified alloy.

2. The method of claim 1, wherein the step of producing the compound phase includes the step of thermally treating the rapidly solidified alloy at a temperature of about 400 ℃ to about 1,200 ℃ for a period of time of about 1 second to about 100 hours.

3. The method of claim 2, wherein the step of thermally treating includes the step of thermally treating the rapidly solidified alloy for at least about 10 minutes.

4. The method of claim 2, wherein the step of thermally treating includes the step of producing a homogeneous $NaZn_{13}$-type crystal structure in the overall rapidly solidified alloy.

5. The method of claim 1, wherein the step of rapidly cooling and solidifying the melt immediately produces the compound phase having the $NaZn_{13}$-type crystal structure.

6. The method of claim 1, wherein the step of rapidly cooling and solidifying the melt includes the step of rapidly cooling and solidifying the melt at a cooling rate of about 1×10^2 ℃/s to about 1×10^8 ℃/s.

7. The method of claim 1, wherein the step of rapidly cooling and solidifying the melt produces a thin-strip rapidly solidified alloy having a thickness of about 10 μm to about 300 μm.

8. The method of claim 1, wherein the magnetic alloy material exhibits a magnetocaloric effect.

9. The method of claim 1, further comprising the step of pulverizing the rapidly solidified alloy.

10. The method of claim 1, wherein the magnetic alloy material has a Curie temperature Tc of about 180 K to about 330 K to represent a magnetic phase transition.

11. The method of claim 1, wherein the step of rapidly cooling and solidifying the melt includes the step of obtaining a rapidly solidified alloy including Co as TM.

12. The method of claim 1, wherein a temperature range in which the magnetic phase transition occurs has a half width ΔTc of at least about 30 K.

13. A magnetic alloy material made by a method comprising the steps of:

preparing a melt of an alloy material having a predetermined composition;

rapidly cooling and solidifying the melt of the alloy material to obtain a rapidly solidified alloy having a composition represented by the general formula:

$Fe_{100-a-b-c}RE_aA_bTM_c$

where RE is at least one rare-earth element that is selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er and Tm and that includes at least about 90 at% of La; A is at least one element that is selected from the group consisting of Al, Si, Ga, Ge and Sn; TM is at least one

transition metal element that is selected from the group consisting of Sc, Ti, V, Cr, Mn, Co, Ni, Cu and Zn; and mole fractions a, b and c satisfy 5 at%$\leqq$a$\leqq$10 at%, 4.7 at%$\leqq$b$\leqq$18 at% and 0 at%$\leqq$c$\leqq$9 at%, respectively; and

producing a compound phase having an $NaZn_{13}$-type crystal structure in at least about 70 vol% of the rapidly solidified alloy.